REMARKS

Claims 1-52 were rejected under 35 U.S.C. Section 102(e) as being anticipated by Yamamoto et al. (USPN 6,553,431) (hereinafter referred to simply as "Yamamoto"). These rejections are respectfully traversed based on the following reasoning.

Yamamoto describes a network-based system which includes a host computer, a file server, input devices and output devices. (See Figure 1 and Col. 6, lines 33-44.)

A first program, executing on the host computer, allows a user to define a virtual input-output device. A flowchart for the first program is given in Yamamoto Figure 8. Furthermore, the first program is described in detail in the passage starting at Col. 9, line 55 and extending through Col. 11, line 49. The first program relies on a graphical user interface (GUI) through which the user may define a virtual device including an input device and a set of one or more output devices. For example, the user may define a virtual copier by specifying a scanner and one or more laser printers as suggested in Figures 9A and 9B.

The first program starts by sending a request to the file server for the device profiles of input devices in the network. (Step S11 of Figure 8 and Col. 9, lines 63-67).

Each device profile specifies information regarding a corresponding one of the input devices. For example, Figure 7 illustrates the device profile for an image scanner. The scanner profile includes information such as:

> the network address of the scanner;
> the set of transfer protocols that the scanner is configured to use;
> the processing resolution of the scanner;
> the paper sizes supported by the scanner; and
> the data format used by the scanner.

If the file server returns a plurality of input device profiles, the user is prompted to select one of the input device profiles. (Steps S13 and S14 of Figure 8 and Col. 10, lines 2-11).

Next, the first program sends a request to the file server for the device profiles of output devices. (Step 15 of Figure 8). The file server may return a set of output device profiles.

The first program searches the output device profiles to determine a subset of the output device profiles which are compatible with the input device profile selected by the user. (Steps S17 and S18 of Figure 8). The profile of an output device is compatible with the profile of the input device if the output device is capable of performing data output of the image data provided by the input device. (Col. 10, lines 17-22).

The first program prompts the user to select one or more output device profiles from the subset of compatible output device profiles. (S20 of Figure 8). Figure 9A illustrates the user's selection of laser printers LP5-3 and PL5-1 to be associated with scanner SCAN5. The subset of devices compatible with scanner SCAN5 are shown in the right side panel 45 of Figures 9A and 9B.

Next, the first program forms a transfer path profile for the virtual device defined by the selected input profile and the one or more selected output profiles. (Step S21 of Figure 8). The transfer path profile includes:

> a short textual description naming the function (e.g., "COPY") of the virtual device and naming the input and output devices of the virtual device;
>
> an identifier of the input device;
>
> a network address of the input device;
>
> identifiers of each of the output devices; and
>
> for each of the output devices:
>
> > a network address;
> > a tray stage for the destination of paper discharge;
> > a transfer protocol;
> > a data processing resolution;
> > a paper size; and
> > a data format.

The first program sends the transfer path profile to the file server. (Step S22 of Figure 8 and Col. 11, lines 30-31).

The file server stores the transfer path profile in recording device 7 together with information regarding the virtual input-output device. Figure 11 illustrates the format of the virtual input-output device information. The virtual input-output device information includes:

> an identifier of the virtual device;

an identifier of the transfer path protocol sent by the host computer in step S22;
a user profile; and
a display comment describing the virtual device.

This information will be referred to herein as a virtual device information record.

The first program may be executed repeatedly to create a number of virtual input-output devices. (This is implied by the fact that multiple virtual device information records are available for selection by the user: Col. 12, lines 1-8.) A given input device may be associated with a plurality of the virtual input-output devices. For example, a scanner may be associated with a printer P1 as part of a first virtual copier, and associated with printers P2 and P3 as part of a second virtual copier. Thus, when the user approaches an input device with the intent to use the input device to perform a copying task, the user must specify which of the virtual devices he/she wishes to invoke.

Therefore, a second program, executing on the input device (not the host computer) allows the user to specify which of the virtual devices is to be invoked for the copying task. This second program is illustrated in the flowchart of Figure 12, and, described in the passage starting at Col. 11, line 50 and extending through Col. 12, line 53.

The second program starts when the user presses a key on the scanner console. (Col. 11, lines 54-55). (The scanner console is illustrated in Figure 3.) In response to this user input, the scanner sends a request to the file server for any virtual device information records that involve the scanner as the input component. (Step S31 of Figure 12, and Col. 11, lines 55-57). If the file server returns a plurality of such virtual device information records, the user is prompted to select one of the records. (Step S33 and S34 of Figure 12). Next, the scanner sends a request to the file server for the transfer path profile of the selected virtual device information record. (Step S35 of Figure 12). Using the information contained in the transfer path profile, the scanner establishes a connection to the output devices specified in the transfer path profile, sets itself for transferring data to the output devices, scans the input image, and transmits the scanned image to the output devices. (Steps S37-S42 of Figure 12).

In contrast, claim 1 recites:

"A method for propagating type information for hardware device nodes in a graphical program, wherein the method operates in a computer including a display screen and a user input device, the method comprising:

displaying on the display screen of the computer a first hardware device node in the graphical program in response to user input, wherein the graphical program comprises a plurality of interconnected nodes or icons, wherein the plurality of interconnected nodes or icons visually indicate functionality of the graphical program;

associating the first hardware device node with a hardware device;

displaying on the display screen a second hardware device node in the graphical program in response to user input;

connecting the first hardware device node to the second hardware device node in response to user input;

propagating information from the first hardware device node to the second hardware device node, wherein the information specifies the hardware device with which the first hardware device node is associated, wherein said propagating occurs in response to said connecting the first hardware device node to the second hardware device node;

wherein the graphical program is executable by the computer."

The Examiner relies on

Figure 6,

Col. 9, lines 7-19, and

Figure 27A, items "A5F-1", "my digital camera", "engineering fax", "muto@cpdc"

from Yamamoto as evidence for the anticipation of

"displaying on the display screen of the computer a first hardware device node in the graphical program in response to user input, wherein the graphical program comprises a plurality of interconnected nodes or icons, wherein the plurality of interconnected nodes or icons visually indicate functionality of the graphical program".

However, please note that the flowchart illustrated in Yamamoto Figure 6 is not a graphical program and does not represent a graphical program. The flowchart does not include "a plurality of interconnected nodes or icons" as recited in claim 1. The boxes containing text descriptions in the flowchart are not nodes or icons. Furthermore, the flowchart is not "executable by a computer" as recited in claim 1. Yamamoto nowhere suggests that the flowchart may be executed. Thus, it is improper to identify the flowchart of Yamamoto Figure 6 with the graphical program of claim 1.

The passage at Col. 9, lines 7-19 describes how a user may supply data to form a device profile for the scanner. (See Figure 7 for the data contents of the scanner device profile.) The Examiner appears to be identifying the scanner device profile with the first hardware device node of claim 1. Note that this passage never suggests that the scanner device profile is a node in a graphical program. Thus, it is improper to identify the scanner device profile with the first hardware device node of claim 1.

Figures 27A-C illustrates a graphical user interface for specifying a virtual device. (Col. 21, lines 23-37). Figure 27A illustrates a graphical user interface for specifying an input device for the virtual device. The Examiner seems to be suggesting that the displayed items "A5F-1", "my digital camera", "engineering fax" and "muto@cpdc" are examples of the first hardware device node of claim 1. However, these displayed items are not nodes in a graphical program. Yamamoto nowhere suggests that the diagram of Figure 27A is part of a graphical program or that it may be executed. Thus, the displayed items are certainly not examples of the first hardware device node of claim 1.

The Examiner relies on Figure 9A, item 1 as evidence for the anticipation of "associating the first hardware device node with a hardware device" as recited in claim 1. In particular, the Examiner states that "The Scan5 note is associated with the input image scanner device." The Scan5 pictogram in Figure 9A represents the scanner device profile. However, the Scan5 pictogram is not and does not represent a node in a graphical program. Thus, it is improper to identify the Scan5 pictogram of Figure 9A with the first hardware device node of claim 1.

Furthermore, note that claim 1 recites displaying the first hardware device node before associating the first hardware device node with a hardware device. Yamamoto nowhere suggests this feature. The pictograms of Figure 9A and 9B are each dedicated to a unique one of the device profiles. There is no suggestion that a pictogram is displayed and then associated with a hardware device.

The Examiner relies on Figure 9A, item 45 (the displayed list on the right side panel) as evidence for the anticipation of "displaying on the display screen a second hardware device node in the graphical program in response to user input" as recited in claim 1. However, as noted above, none of the pictograms shown in Figure 9A are nodes in a

graphical program. There is absolutely no suggestion in Yamamoto that the diagram shown in Figure 9A could be executed as a program by a computer.

The Examiner relies on the passage at Col. 3, lines 23-56 as evidence for the anticipation of

> "propagating information from the first hardware device node to the second hardware device node, wherein the information specifies the hardware device with which the first hardware device node is associated, wherein said propagating occurs in response to said connecting the first hardware device node to the second hardware device node"

as recited in claim 1. This passage from Yamamoto refers to the information processing device (i.e., the host computer) acquiring and registering virtual device information records and also to the input device (e.g., the scanner) acquiring the virtual device information records and then directly **transferring data** to the output device (e.g., a laser printer). However, note that the data is being transferred between one device and another device in a network, not between one node and another node in a graphical program as recited in claim 1. Furthermore, Yamamoto teaches that the data being transferred from the input device to the output device is an image that has been scanned at the input device. (See, e.g., step S40 and S41 of Figure 12.) Thus, the data being transferred is not information that specifies the input device as recited in claim 1.

Applicant assumes that the Examiner is identifying *the data directly transferred from the input device to the output device (disclosed at Col. 3, lines 38-39 and lines 50-51)* as the information recited in claim 1. However, Applicant is not entirely sure since the Examiner has not so stated. Clarification is respectfully requested.

In the passage starting at Col. 11, line 54 and extending through Col. 12, line 20, Yamamoto teaches that the scanner requests and receives a transfer path profile from the file server after the user has selected a particular virtual device to be invoked. The transfer path profile includes information regarding the output devices of the virtual device, as shown in Figure 10. However, note that the transfer path profile is not propagated from one node to another node in a graphical program as recited in claim 1. Thus, it does not make sense to identify the transfer path profile with the information being propagated in claim 1.

Furthermore, Yamamoto nowhere teaches or suggests ". . .propagating information from the first hardware device node to the second hardware device node, . . . wherein said propagating occurs in response to said connecting the first hardware device node to the second hardware device node. . ." as recited in claim 1.

Thus, claim 1 and its dependents are patentably distinguished over Yamamoto at least for the reasons given above.

Claims 18 and 32 each include features similar to Claim 1. Thus, Claims 18 and 32, and their dependents, are patentably distinguished over Yamamoto at least for the reasons given above in support of claim 1.

Claim 10 recites:

> "A method for performing type checking for a hardware device node in a graphical program, wherein the method operates in a computer including a display screen, the method comprising:
> displaying on the display screen of the computer a first hardware device node in the graphical program in response to user input, wherein the graphical program comprises a plurality of interconnected nodes or icons, wherein the plurality of interconnected nodes or icons visually indicate functionality of the graphical program;
> associating the first hardware device node with a first hardware device class in response to user input;
> selecting a method or property of the first hardware device class for the first hardware device node in response to user input;
> changing the first hardware device node to have an association with a second hardware device class in response to user input; and
> performing type checking to determine whether the method or property is valid for the second hardware device class, in response to said changing the first hardware device node to have an association with the second hardware device class;
> wherein the graphical program is executable by the computer."

The Examiner relies on Figure 6 and Col. 9, lines 7-19 from Yamamoto as evidence for the anticipation of "displaying on the display screen of the computer a first hardware device node in the graphical program in response to user input" as recited in claim 10. This same feature is recited in claim 1, and thus, the arguments given above with respect to this feature apply to claim 10 also.

The Examiner relies on Figure 9A as evidence for the anticipation of "associating the first hardware device node with a first hardware device class in response to user input" as recited in claim 10. In particular, the Examiner states "The Scan 5 note is associated with the input devices" (*Underlining added*). Applicant is not sure if the Examiner meant "input devices" in the quoted statement, or, "output devices". Figure 9A shows a plurality of output devices but does not show a plurality of input devices. Specifically, it is not clear what the Examiner means to identify with the first hardware device class of claim 10. *Clarification is respectfully requested.*

The pictograms shown in Figure 9A represent device profiles, and thus, the corresponding devices. Each pictogram represents a single device, not a hardware device class. A list of available output devices for the scanner device is displayed on the right side panel of the GUI in Figure 9A. Specific members of this list may be selected by the user to be associated with the input device as part of a virtual device (such as a virtual copier). However, note that these selections in no way relate to associating a hardware device node *in a graphical program* with a hardware device class. The Scan5 pictogram is not a hardware device node in a graphical program and the output device pictograms are not hardware device classes.

According to the Applicant's specification, each hardware device class defines a set of properties and methods that are valid for that class. Yamamoto nowhere teaches or suggests the idea of a hardware device class. The device profiles of Yamamoto describe specific hardware devices and are not hardware device classes.

Applicant notes that the Examiner has not asserted any argument (or pointed to any evidence from Yamamoto) regarding "selecting a method or property of the first hardware device class for the first hardware device node in response to user input" as recited in claim 10. Applicant notes that

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)." (See also MPEP 2131) (*Underlining added*)

Applicant respectfully requests that the Examiner either point to evidence for the anticipation of the "selecting" feature, or, remove the 102 rejection of claim 10 (and its dependents).

The Examiner relies on Col. 9, lines 7-19 as evidence for the anticipation of "changing the first hardware device node to have an association with a second hardware device class in response to user input" as recited in claim 10. Col. 9, lines 7-19 describes how a user may supply data to form a device profile for the scanner. This passage does not even remotely suggest the idea of changing a node to have an association with a **different** hardware device class as recited in claim 10. The passage is entirely concerned with specifying profile data for a single device: the scanner.

Furthermore, it is important to note that the language "changing the first hardware device node to have an association with a second hardware device class" implies that the first hardware device node *is no longer associated with the first hardware device class after said changing.* This interpretation is supported in the Applicant's specification at page 34, line 20:

> "In step 604, the hardware device node may be changed to have an association with a second hardware device class. For example, the user may disconnect the wire that was originally connected to the hardware device node's refnum input terminal and may connect a new wire to the terminal. For example, the new wire may originate from a different hardware device node that is associated with the second hardware device class, which may be different than the first hardware device class."

Yamamoto nowhere teaches or suggests a change of association of a graphical program node from one device to another, or, from one device class to another.

It is not clear what element (or set of elements) in Yamamoto the Examiner means to identify with the second hardware device class of claim 1. *Clarification is respectfully requested.*

The Examiner relies on the passage starting at Col. 10, line 37 and extending through Col. 11, line 5 as evidence for the anticipation of

> "performing type checking to determine whether the method or property is valid for the second hardware device class, in response to said changing the first

hardware device node to have an association with the second hardware device class"

as recited in claim 10. This passage from Yamamoto describes how a user may manipulate the graphical user interface of Figures 9A and 9B to specify a virtual device including an input device and one or more output devices. However, there is no suggestion in this passage (or anywhere else in Yamamoto) that type checking is performed to determine whether a selected method/property of a first hardware device class is valid for a second hardware device class.

Yamamoto does disclose at Col. 10, lines 17-25 that an initial set of output device profiles received from the file server may be searched to determine the profiles of output devices capable of handling the data from a given input device. This search involves among other things determining which of the output devices utilize a data format that is consistent with the data format used by the input device, based on their profiles (Col. 10, lines 22-25.) Perhaps the Examiner means to identify:

the Scan5 pictogram of Figure 9A as the first hardware device node of claim 10;

the scanner device profile as the first hardware device class of claim 10;

the device profile of laser printer LP5-3 as the second hardware class of claim 10; and

the compatibility determination of Col. 10, lines 17-25 with the type checking of claim 10.

However, such identifications would be improper because:

the pictograms of Figure 9A are not nodes in a graphical program;

the device profiles of Yamamoto describe specific hardware devices, and thus, are not hardware device classes;

the compatibility determination described by Yamamoto is performed prior to the association of an output device (or output device pictogram) with the Scan5 pictogram.

Yamamoto's compatibility determination is performed prior the user making any selections, not in response to changing a first hardware device node to have an association with a second hardware device class as recited in claim 10.

Applicant respectfully submits that, at least for the reasons presented above, Claim 10 and its dependents are patentably distinguished over Yamamoto.

Claims 26 and 39 each recite features similar to those recited in Claim 10, and thus, Claims 26 and 39, and their dependents, are patentable distinguished over Yamamoto at least for the reasons given above in support of claim 10.

Therefore, removal of the §102 rejections is respectfully requested.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel PC Deposit Account No. 50-1505/5150-52100/JCH.

Also enclosed herewith are the following items:

- ☒ Return Receipt Postcard
- ☐ Request for Approval of Drawing Changes
- ☐ Notice of Change of Address
- ☐ Check in the amount of $ for fees ( ).
- ☐ Other:

Respectfully submitted,

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